

## THE LIFE HISTORY OF *CROITANA ARENARIA* EDWARDS, 1979 (LEPIDOPTERA: HESPERIIDAE: TRAPEZITINAE)

By Andrew Atkins\* and C. G. Miller†

\* 45 Caldwell Avenue, Dudley, New South Wales 2290

† 35 Uralba Street, Lismore, New South Wales 2486

### Abstract

The early stages and biology of the proeidosine skipper *Croitana arenaria* Edwards from central Australia are described and figured.

### Introduction

Edwards (1979) described two species of skipper (*Croitana arenaria* and *Croitana aestiva*) from the arid zone of the Northern Territory around Alice Springs and the Plenty River areas. The remaining, and type species of the genus, *Croitana croites* (Hewitson), is found in coastal and near coastal areas of south-western Western Australia.

The type series of *Croitana arenaria* was collected by Edwards in September and October, 1978 from five localities within 60 km of Alice Springs. The first example of the species was collected many years ago at Hermannsburg, 116 km W. by S. of Alice Springs.

In the first week of February, 1987, the authors collected eggs, larvae and a pupa of *C. arenaria* from several localities in and around Alice Springs, and these were reared to adults in New South Wales.

### Life History

*Foodplant.* *Enteropogon (Chloris) acicularis* (Lindl.) Lazar., family Poaceae.

*Egg* (Fig. 1). Diameter 1 mm, hemispherical, pale green to pearl white, with 13-16 ribs.

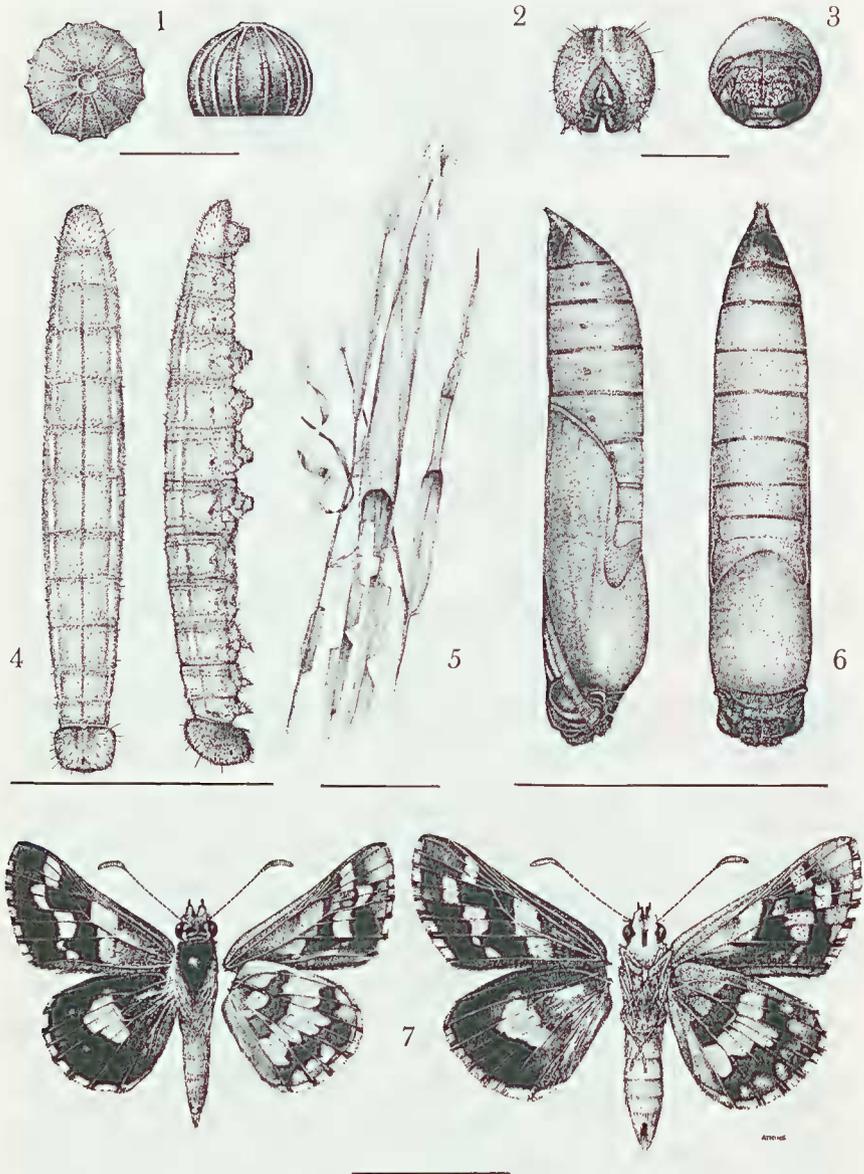
*Larva* (Figs 2, 4). First instar 4 mm long; head and prothoracic plate shiny black; body pale semi-translucent yellow. Second to final instar 5 mm-24 mm long, head pale yellow-brown with variable darker/dorsal markings, mouthparts brown-black; body pale green to light brown with lateral areas bordering a pale dorso-lateral band and a dark dorsal line.

*Pupa* (Figs 3, 6). Length 12-15 mm, yellow-brown with dark brown anterior and frons area. Pupal cap rugose, with shallow transverse and vertical furrow.

### Biology

The egg is laid on the upperside of a leaf of the foodplant. The first instar larva rolls together the edges of the leaf blade and secures them with silk. The larva rests in this tube shelter, facing towards the stem of the grass blade. The edges and distal part of this leaf are eaten. A similar but larger shelter is made by the second instar larva.

Later instars construct a generally downward-facing tent-like shelter from two or more leaves. This structure is supported by strongly-woven, uneaten ribs of the leaf blade (Fig. 5). The larva eats at dusk and again at dawn. Supporting and nearby leaves are eaten, leaving chisel shaped cuts to the edges of the leaves. The larva is generally active, securing with silk leaves



Figs 1-7. Life history of *Croitana arenaria* Edwards: (1) egg; (2) final instar larval head; (3) pupal head; (4) third instar larva; (5) pupal and first instar shelters; (6) pupa; (7) adult male, upperside and underside and adult female, upperside and underside. Scale-bars (1) = 1 mm. (2), (3) = 2 mm; (4), (5), (6), (7) = 10mm.

and stems to provide 'pathways' to fresh leaf growth. When disturbed the larva vigorously waves its head from side to side. Several late instar larvae produced small ichneumonid parasites.

Pupation occurs, head downward, in the final instar larval shelter and adults emerge 12-16 days later.

#### Notes

Adults of this skipper were not observed in the field, but the presence of all stages of the life history in February, after good rainfall, suggests that *Croitana arenaria* flies sporadically throughout the warmer months of the year if adequate rains have fallen.

The foodplant, commonly known as 'Windmill grass' or 'Curley grass' grows locally in compact red sandy loams on open plains or in swales between low hills or near dry river beds. Larvae were found in these situations, both close to the suburbs of Alice Springs, and from 49 km E. to 26 km W. of that city. Two larval colour-forms were found. In the early instars a brown form, generally occurring on foodplants growing in open areas, was prevalent, however a green form was found usually on foodplants growing in the shade of trees and bushes. However, later instars are all brown irrespective of their situation.

*Enteropogon acicularis* is widespread in the central sub-arid and arid regions of Australia and it is reasonable to expect that *Croitana arenaria* may have a considerably greater distribution than so far recorded.

#### Acknowledgement

The authors are grateful to the staff of the Arid Research Institute, Alice Springs, for help in identifying the foodplant.

#### Reference

Edwards, E. D., 1979. Two new species of *Croitana* Waterhouse (Lepidoptera: Hesperidae) from central Australia. *Aust. ent. Mag.* 6(2): 29-38.

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#### BOOK REVIEW

**Australia's butterflies** by Peter Wilson. 1987. 64 pp., illustrated with 16 colour plates. Kangaroo Press, P.O. Box 73, Kenthurst, N.S.W. Price \$14.95.

This soft covered book is written specifically for the layperson. Eighty two of the more common butterfly species are discussed and illustrated, with excellent colour photographs taken in the wild.

The Introduction provides an account of butterfly biology, nomenclature, collecting and photography. The main text includes brief descriptions of the five major families occurring in Australia and notes on the species illustrated. Details on species distribution are sketchy. Common names are given prominence and technical terms are minimised.

The photographs are generally of a high standard and grouped together on 16 colour plates. However, some photographs hide details useful for identification. The index could have been expanded to include separate listings of specific names which are given only as adjuncts to generic names. It is disappointing that the publisher has shown little imagination in text layout with indistinct headings and cramped margins.

At \$14.95 this book provides a useful introduction for the novice collector or observer of 'Australia's butterflies'.

Stephen & Bronwyn UNDERWOOD